



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **TAUBER et. al**

Application Serial No.: **10/785,510**

5 Application Filed: **February 17, 2004**

Attorney Docket No.: **CECOM 5522**

For: **RARE EARTH METAL COMPOUNDS FOR USE IN HIGH CRITICAL
TEMPERATURE THIN FILM SUPER-CONDUCTING ANTENNAS**

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AMENDMENTS TO THE CLAIMS

Sir:

In accordance with the enclosed Remarks, please amend the claims in the above-identified application as follows:

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1-47 (Canceled)

48. (Currently Amended) An A high T_c superconducting antenna, comprising:
a single layer of a copper oxide superconductor deposited onto a single crystal substrate
20 of the formula $\text{Sr}_2\text{LuSbO}_6$;

said single crystal substrate being heated for at least 20 hours at ~~between 1400° C and~~
1600 ° C;

said single crystal substrate being constructed in a bulk form;

said single crystal substrate having an ordered perovskite cubic crystalline structure;

25 said single crystal substrate having a low dielectric constant of 15.1;

said single crystal substrate having a low dielectric loss of less than 1×10^{-3} without a
phase transition;

said formula including an Sb^{5+} constituent atom with a polarizability of about 1.2 \AA^3 ; and

30 said single layer of the copper oxide superconductor being patterned to complete the
device.

80. (Currently Amended) A high T_c superconducting~~An~~ antenna device, comprising:
a single layer of a copper oxide superconductor deposited onto a substrate;
5 said substrate having a buffered layer with the formula Sr_2LuSbO_6 ;
said buffered layer being heated for at least 20 hours at ~~between 1400° C and 1600 ° C~~;
said buffered layer having an ordered perovskite cubic crystalline structure;
said buffered layer having a low dielectric constant of 15.1;
said buffered layer having a low dielectric loss of less than 1×10^{-3} without a phase
10 transition;
said formula including an Sb^{5+} constituent atom with a polarizability of about 1.2 \AA^3 ; and
said single layer of the copper oxide superconductor being patterned to complete the
device.